

SECTION 02270

EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes the use of silt fence, erosion mat, check dams and ditches, and temporary vegetation for the control of erosion and sediment.

1.02 RELATED SECTIONS AND PLANS

- A. Section 02271 - Riprap
- B. Section 02721 - Culverts
- C. Section 02930 - Vegetation
- D. Surface-Water Management and Erosion Control (SWMEC) Plan, Revision 0, May 1997
- E. Part 6 - Statement of Work
- F. Part 8 - Environmental Health and Safety, and Training Requirements

1.03 REFERENCES

- A. *Rainwater and Land Development*, 2nd. ed., 1996, Ohio Department of Natural Resources (Rainwater and Land Development, [1996]).

1.04 SUBMITTALS

- A. Prepare and submit to the Construction Manager within 15 calendar days from Notice to Proceed a Surface-Water Management and Erosion Control Plan that meets the requirements of the SWMEC Plan identified in this Section. Organize the Surface-Water Management and Erosion Control Plan to include, at a minimum:
 - 1. descriptions of the surface-water management and erosion and sediment-control measures to be implemented throughout the duration of the Contract;

2. methods for installing and maintaining surface-water management and erosion and sediment control measures;
3. drawings illustrating, in plan view, the location and sequencing of the surface-water management and erosion and sediment control measures;
4. details of the surface-water management and erosion and sediment control measures;
5. calculations supporting the surface-water management and erosion and sediment control measures;
6. manufacturer's product data and recommended methods of installation; and
7. certification from supplier or manufacturer that the products meet the material requirements of this Section.

1.05 HEALTH AND SAFETY REQUIREMENTS

- A. Environmental, health and safety, and other training requirements shall be as specified in Part 8 of the Contract Documents.

PART 2 PRODUCTS

2.01 SILT FENCE

- A. Furnish silt fence with either woven or nonwoven fabric. Silt fence shall:
 1. be woven fabric consisting of slit films of polypropylene treated with ultraviolet light stabilizers;
 2. be nonwoven fabric consisting of long chain polymeric filaments or polyester yarns;
 3. be inert to chemicals commonly found in soils and to hydrocarbons;
 4. be resistant to mildew, rot, insects, and rodent attack; and
 5. have fabric and fence post properties and minimum dimensions in accordance with Rainwater and Land Development [1996].

2.02 EROSION MAT

- A. Furnish erosion mat consisting of excelsior matting covered with plastic netting on both sides.
- B. Furnish erosion mat that will resist degradation for a minimum 12-month period after installation.
- C. Furnish erosion mat that will be capable of resisting shear stresses generated by water flowing across its upper surface of 0.4 pounds per square foot.

2.03 TEMPORARY VEGETATION

- A. Temporary vegetation shall be furnished as specified in Section 02930.

2.04 OTHER MATERIALS

- A. Riprap for ditch check dams shall be as specified in Section 02271.
- B. Crusting agents shall be furnished as specified in Section 13010.
- C. Culverts shall be furnished as specified in Section 02721.
- D. Other materials for other erosion and sediment controls shall be as required in Rainwater and Land Development [1996].

PART 3 EXECUTION

3.01 INSTALLATION

- A. Silt Fence
 - 1. Install silt fence in accordance with, and at sheet flow application locations as required by, the Surface-Water Management and Erosion Control Plan.
 - 2. Install silt fence in accordance with the requirements of Rainwater and Land Development [1996].
- B. Erosion Mat
 - 1. Provide erosion mat at the locations indicated on the Construction Drawings. Begin erosion mat installation in an area within 48 hours after seeding operations have been completed in that area.
 - 2. Place erosion mat on a prepared surface that is free of deleterious vegetation, trash, ruts, and rocks.
 - 3. Overlap adjacent erosion mats in a manner such that they are shingled in the direction of water flow.
 - 4. Install erosion mat and staples in accordance with manufacturer's recommendations.
- C. Install check dams according to Rainwater and Land Development (1996) in ditches. Straw bales may be used in conjunction with rock check dams as a prefilter.

- D. Crusting Agents shall be installed in accordance with Section 13010. Areas of crusting agent use shall be approved in advance by the Construction Manager.
- E. Temporary Vegetation: Establish temporary vegetation as specified in Section 02930.
- F. Install riprap as specified in Section 02271.
- G. Install culverts as specified in Section 02721.
- H. Other Erosion and Sediment Controls: Install other erosion and sediment control as required by Rainwater and Land Development [1996].

3.02 ADDITIONAL PROVISIONS DURING CONSTRUCTION

- A. Prevent the run-off of polluting substances such as silt, clay, fuels, oils, and contaminated soils into the water supplies and surface waters. Take special precautions in the use of construction equipment to prevent operations which promote erosion.
- B. Remove accumulated silt and debris from behind the face of the silt fence when the silt deposits reach approximately one half the height of the fence. Replace silt fence fabric damaged during maintenance operations.

3.03 MAINTENANCE

- A. Clean, maintain, repair, and replace erosion and sediment control products as needed throughout the duration of the Contract in accordance with the Surface-Water Management and Erosion Control Plan.
- B. Maintenance of the existing OSDF sedimentation basin shall be as specified in Part 6 of the Contract Documents.

3.04 CONSTRUCTION QUALITY REQUIREMENTS

- A. Inspect erosion and sediment control measures to evaluate their effectiveness and need for maintenance. Any required repairs to the erosion and sediment control measures shall be made within 24 hours of problem discovery. Inspections shall occur, at a minimum, at the following frequencies:
 - 1. weekly;
 - 2. daily after each rain event exceeding 0.5 inches; and
 - 3. at least daily during prolonged rainfall events.

- B. Records of inspections shall be kept on file at Contractor's site office and shall be submitted monthly to the Construction Manager.

[END OF SECTION]